

REMARKS

Claims 1-25 are pending. Claims 1-3 and 16 are amended and the specification has been amended to correct a minor informality found therein.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution; (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

In paragraph 8, on page 9 of the Office Action, claims 10 and 24 were objected to as being dependent upon a rejected base claim but indicated as allowable if rewritten in independent form including all of the features of the base claim and any intervening claims. Applicant appreciates this indication of allowability but submits that claims 1 and 16, the claims from which claims 10 and 24 respectively depend, are allowable for the reasons discussed below.

In paragraph 2, on page 2 of the Office Action, claims 1-9, 11, 16, 18 and 20-23 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,712,357 to Tranquilla. The rejection is respectfully traversed.

Applicant's claim 1 calls for a recording medium conveying device that conveys a recording medium to a recording area, comprising a pair of first conveyor rollers that are provided upstream of and adjacent to the recording area and convey a recording medium by nipping the recording medium therebetween, no roller being disposed between the pair of first conveyor rollers and the recording area; a detector that detects a position of the recording

medium; a nipping force changing unit that changes the nipping force of the pair of first conveyor rollers; and a controller that controls an operation of the nipping force changing unit in accordance with the position of the recording medium detected by the detector.

Applicant's claim 16 calls for an image forming apparatus that forms an image onto a recording medium, comprising an image forming device that forms an image onto the recording medium; a platen that is provided facing a recording operating service of the image forming device; a pair of first conveyor rollers that are provided upstream of and adjacent to the platen and convey the recording medium by nipping the recording medium therebetween, no roller being disposed between the pair of first conveyor rollers and the platen; a detector that detects a position of the recording medium; a nipping force changing unit that changes the nipping force of the pair of first conveyor rollers; and a controller that controls an operation of the nipping force changing unit in accordance with the position of the record medium detected by the detector. Thus, both of the Applicant's independent claims call for the pair of first conveyor rollers provided upstream of and adjacent to the recording area (platen) with no roller being disposed between the pair of first conveyor rollers and the platen. Tranquilla discloses no such thing.

As discussed in the Amendment filed September 28, 2005, Tranquilla discloses a printing device for document handling systems, such as check processors, tag printers and ticket printers (col. 1, lines 14 and 15). The transport area through the print area, which is defined by a hammer bank 124 opposing a print drum 126 and ribbon 128, includes a capstan 118 opposed by a pinch roller 120, that is upstream of and adjacent to the hammer bank 124/print drum 126, but for an edge sensor 122 between the capstan 118/pinch roller 120 and hammer bank 124/print drum 126, and an exit transport element 130 comprising a drive roller 132 and a pinch roller 134. Further upstream, from the capstan 118/pinch roller 120, is an entrance transport element 112. The entrance transport element 112 includes a drive roller

114, a pinch roller 116 and a pinch force release mechanism 152. The entrance transport element 112 is a high speed delivery element that passes the print medium to the capstan 118/pinch roller 120 position.

This structure provides two methods of operation, one for long documents and one for short documents. Only in the long documents is the pinch force release mechanism 152 activated to release the pinch roller 116 of the entrance transport element 112. In no case is the nipping force of the capstan 118/pinch roller 120 changed, that is, the nipping force of the conveyor rollers adjacent the printing area is not changed.

In Tranquilla, the capstan 118/pinch roller 120 and drive roller 132/pinch roller 134, which, by position, equate to Applicant's pair of first conveyor rollers and pair of second conveyor rollers, constantly rotate. When the leading edge of a document is detected by the edge sensor 122, the pinch roller 116 is separated from the drive roller 114 of the entrance transport element 112 which are upstream of the capstan 118/pinch roller 120. At this time, the pinch force release mechanism 152 is in a non-pinch force mode. However, the entrance transport pinch force F_p of the capstan element 118 against the pinch roller 120 is retained.

The document 110 is decelerated to a document processing position, as shown in Fig. 3b. Document processing is then performed and the capstan element 118 accelerates the document 110 toward and up to the speed of the exit transport element 130. At this time, the pinch force of the entrance transport element 112 is reapplied to increase the speed or to assist the capstan element 118 in accelerating the document 110 (col. 4, lines 41-64).

The preceding is for a long document. For a short document, the pinch roller 116 is not released and remains always in the pinch force mode primarily because a short document will clear the pinch force release mechanism 152, that is the drive roller 114/pinch roller 116. Thus, the paired rollers, the capstan element 118/pinch roller 120, on the upstream side of the

print mechanism always maintain contact with the document 110. The capstan element 118/pinch roller 120 never release.

The furthest upstream pair of rollers, the entrance transport element 112 including the drive roller 114/pinch roller 116, release for long documents but repinch to assist in accelerating the document toward and up to the speed of the exit transport element 130. Therefore, the releasing elements are not at Applicant's claimed position having no roller between the pair of first conveyor rollers and the recording area. Tranquilla's nonreleasing capstan element 118/pinch roller 120 are between the pair of first conveyor rollers (that change the nipping force) and the recording area which is counter to Applicant's invention (with an interposed edge sensor 122).

In fact, Tranquilla teaches precisely doing what Applicant identifies as a problem, that is the speeding up of the document by the upstream conveyor rollers during release. In the claimed invention, the release of the nip rollers of the upstream rollers prevents the sudden acceleration of the document which can lead to improper printing (see paragraph [0005], [0048] and [0049]).

Tranquilla says nothing about reducing the nipping forces of the first conveyor rollers, as Tranquilla, during printing drives the capstan element 118/pinch roller 120 increasing the speed after printing, and says nothing about a step by step nipping adjustment of the entrance transport element 112 (claim 4); nothing about allowing the nipping force changing unit to change the nipping force while the pair of first conveyor rollers are not driven as the capstan 118/pinch roller 120 do not change their nipping force (claim 6); nothing about the detailed actions found in claim 8 or the actions found in claim 9; anything about intermittently driving the pair of conveyor rollers (claim 18); nothing about allowing the nipping force changing unit to change the nipping force while the first pair of conveyor rollers are not driven (claim 20), or the details of claims 22 and 23. Likewise, Tranquilla does not anticipate the subject

matter of the remaining rejected claims for all of the reasons discussed with respect to claims 1 and 16 and for the additional features recited.

The Office Action argues that a pair of first conveyor rollers 114, 116 are provided upstream of and adjacent to the recording area. As noted above, roller 114 is a drive roller and 116 is a pinch roller that are part of the entrance transport element 112. Between them and the print area, defined by the hammer bank 124/print drum 126, is what is truly the first pair of conveyor rollers, the capstan 118/pinch roller 120. Applicant has not amended claims 1 and 16 with respect to the meaning of "adjacent" to either the recording area (1) or the platen (16), as the word "adjacent" means close to; lying near or next to; or joining. In Tranquilla, the entrance transport element 112 has the capstan 118/pinch roller 120 lying between it and the hammer bank 124/print drum 126 which constitutes the print area. As such, it does not meet the definition of adjacent which is misinterpreted in the Office Action. Therefore, Tranquilla does not literally disclose the claimed invention, and it is respectfully requested the rejection be withdrawn.

In paragraph 4, on page 5 of the Office Action, claims 12 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tranquilla in view of U.S. Patent No. 5,129,749 to Sato; in paragraph 5, on page 6 of the Office Action, claims 14 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tranquilla in view of Dodge, U.S. Patent No. 4,619,451; in paragraph 6, on page 7 of the Office Action, claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Tranquilla in view of Burkard et al. (Burkard), U.S. Patent No. 4,053,224; and in paragraph 7, on page 8 of the Office Action claims 19 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tranquilla in view of Taniguro et al. (Taniguro), U.S. Patent No. 5,580,042. The rejections are respectfully traversed.

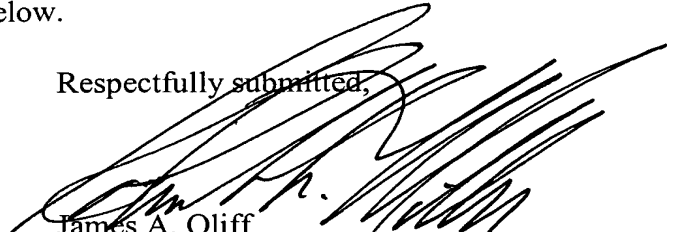
The Office Action repeats the rejections as presented in the Office Action mailed May 4, 2005. There is limited rebuttal of the points Applicant made in the Amendment filed September 28, 2005. For example, there has been no discussion of how it is imagined that Sato would be applied to Tranquilla. If we are addressing nipping force, then Sato would be applied to the entrance transport element 112 in some manner. What advantages that would provide to the Tranquilla apparatus are not enumerated. There must be some motivation simply to say that there is an advantage of using a cam over a controller motor rotating an arm. An advantage does not jump at one as Tranquilla only addresses two states, nip and release, whereas a cam suggests a transition between the states which Tranquilla shows no need for.

Further, in response to comments concerning Dodge, we are not talking about automating what was a manual process. There is no way to do Applicant's claimed action in a manual manner while the printer is operating. Dodge deals with presetting drive rollers via screw caps 13. Applicant's invention, on the other hand, uses a controller to produce the same strength or varying strength at the first conveyor rollers depending on the relationship to a center of the recording medium. Thus, during operation the nipping force changing unit controls the nipping force. In Dodge, once the nipping force is set manually, until some future time when there is no operation going on, the nipping force is not changed by the adjustment mechanism, the manual method. Thus, the alleged combinations do not suggest the subject matter of claims 12-15, 17, 19 and 25 for all of the reasons discussed above, particularly those reasons discussed with respect to claims 1 and 16, and for the additional features recited therein and the discussion above concerning some of those features.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-25 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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